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June 11, 1982

Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL 62702

Attention Mr. Terry Ayres

Reference Brighton Landfill Modifications

Gentlemen:

During our meeting Thursday at I.E.P.A. offices in Springfield, there came to light a discrepancy in our report regarding the above-referenced project. This discrepancy was a difference in reported permeability values on Sample 4 from Boring 4. A permeability value of 1.1×10^{-7} cm/sec. was reported on the Record of Subsurface Exploration for Boring 4, but a value of 1.1×10^{-2} cm/sec. was shown on the grain size curve for this sample.

I indicated in our meeting that the 1.1×10^{-2} cm/sec. value was inconsistent with the grain size curve and that I was sure that the correct value was 1.1×10^{-7} cm/sec. as shown on the Record of Subsurface Exploration. Upon returning to our office, I immediately examined our files to be sure that my assertion to you was correct. Our records confirm that it was. Enclosed for your record is a copy of our laboratory test sheet which supports my assertion and also a copy of a corrected grain size curve which should be considered to be an addendum to our original report. If there are any questions regarding this or any other portion of our work on this project, please feel free to contact me at your convenience.

Sincerely,

JOHN MATHES & ASSOCIATES, INC.

Gary M. Mathes, P.E.
Vice-President

GMM:jcs

Enclosures Laboratory Test Sheet
Grain Size Curve, Boring 4A

CC Mike Rapps, M. Rapps Associates, Inc.

PERMEABILITY TEST

FALLING HEAD

Project No. 1154 Technician MAX Date 1-4-82

SAMPLE DATA P-5 (REMOLDED @ NAT MC)

Boring No. 4A Sample No. 4 Jar No. — Depth 9-10.5'

TARE NO.-			DIAMETER cm	D	3.36
TARE + DRY SOIL			AREA cm^2	A	8.87
TARE			INITIAL HEIGHT cm	L	6.47
DRY SOIL	W_s		INITIAL VOLUME cm^3	V	57.39
SPECIFIC GRAVITY	G_s		INITIAL VOID RATIO	e	
VOLUME OF SOILDS	V_s		VISCOSITY CORRECTION	R_t	

TEST DATA P-5 FP+ST = 0.67 cm Δm = 7.14 cm

INITIAL HEAD cm h_o 220.5 AREA OF STANDPIPE cm^2 a 0.38

Date	Day	Time	Elapsed Time min ' sec	Flow cm^3 Q	Head Loss cm	Head cm h_1	Coefficient of Permeability k cms/min - sec
1-4	ST	5:30	—	—			
1-5	1	4:30		3.25			
1-5	RE	4:30	—	—			
1-6	2	3:25		2.75			
1-6	RE	3:25	—	—			
1-7	3	4:20	1495"	2.90	7.63	212.87	6.5×10^{-6} / 1.1×10^{-7}
1-7	RE	4:20	—	—			
1-8	4	3:10	1370	2.80	7.37	213.13	6.9×10^{-6} / (1.1×10^{-7})

$$k_{20} = 2.303 \frac{aL}{Af} \text{LOG} \frac{h_o}{h_1} \times R_t$$

Computed by MAX
Checked by

GRAIN SIZE CURVES

PERCENT FINER BY WEIGHT

U.S. STANDARD SIEVE OPENINGS IN INCHES

U.S. STANDARD SIEVE NUMBERS

HYDROMETER

GRAIN SIZE IN MILLIMETERS

PERCENT COARSER BY, WEIGHT

	GRAVEL		SAND			SILT or CLAY
	Coarse	Fine	Coarse	Medium	Fine	

Boring	Sample	Depth	* K (cm/sec)	Description
4A	4	9.0 - 10.5'	1.1×10^{-7}	Brown Loamy SAND

*Remolded Permeability Sample